EUROPEAN PATENT OFFICE

Pat nt Abstracts f Japan

PUBLICATION NUMBER

60123084

PUBLICATION DATE

01-07-85

APPLICATION DATE

08-12-83

APPLICATION NUMBER

58231742

APPLICANT: MATSUSHITA ELECTRIC IND CO LTD;

INVENTOR:

KOGA KEISUKE;

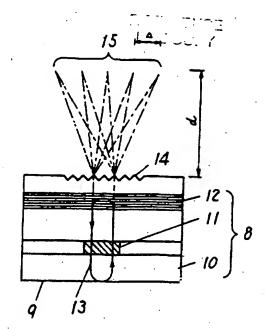
INT.CL.

H01S 3/18 // G02B 6/26

TITLE

SEMICONDUCTOR LIGHT

GENERATOR



ABSTRACT :

PURPOSE: To miniaturize and stabilize the titled generator, and to improve coupling efficiency between a light source and an optical transmission line by using a surface light-emitting semiconductor laser as a semiconductor laser and employing a device . consisting of a periodic waveguide, in which a plurality of optical waveguide layers are laminated on an active layer in the surface light-emitting semiconductor laser, as a resonator.

CONSTITUTION: A surface light-emitting semiconductor laser has laser oscillation action while using a substrate surface 9 and a laminated type optical waveguide layer 12, which is grown on an active layer 11 in an epitaxial manner and has a diffraction grating function, as both resonator surfaces. Oscillation wavelength can be selected arbitrarily by changing the thickness and refractive index of the laminated type optical waveguide layer 12 having a periodic waveguide within a range of the gains of the active layer 11. Since output signals can be extracted in large areas and under collimating states in the surface light-emitting semiconductor laser, spot size can be reduced when output signal beams are distributed by using a transmission type diffraction grating 14. A resist diffraction grating is prepared on the surface containing a light-emitting region in the surface light-emitting semiconductor laser, and etched, thus transferring the diffraction grating pattern on the light-emitting surface of the surface light-emitting semiconductor laser 8:

COPYRIGHT: (C) JPO